

REMARKS

In view of the claim amendments detailed above and the remarks that follow, the present application is believed to be in immediate condition for allowance. Accordingly, Applicants respectfully request that the Examiner pass the present application to issue.

I. Status of the Claims

Claims 1-2, 5, and 7-13 remain pending in the present application of which claims 1, 5, 7, and 9 are independent. Applicants cancelled claims 3-4 and 6 without prejudice. Claim 2 depends from claim 1, claim 8 depends from claim 7, while claims 10-13 depend from claim 9. Claims 1-13 stand rejected.

Applicants amended claims 1, 5, 7, and 9. Claim 1, as currently amended, includes the limitations found in, now cancelled, claim 6. Claim 5, as currently amended, has been rewritten in independent form and includes the limitations found in, now cancelled, claims 3-4. Claims 1, 7, and 9 have been amended to include the limitation “at least one of said claw-poles facing the continuous flattened-oval section of the fifth and sixth side walls” or words to this effect. Support for this amendment can be found in at least Figure 3 of the specification as originally filed. No new matter has been added.

In view of the claim amendments and remarks, Applicants respectfully request reconsideration of the present application.

II. Rejection under 35 U.S.C. §103

Claims 1-13 stand rejected pursuant to 35 U.S.C. §103(a) as being unpatentable over the Applicants' Prior Art (“APA”) in view of Japanese Patent No. JP06014515 to Hayashi et al. (“Hayashi”) and in further view of Japanese Application No. 09-238400 to Nobuaki et al. (“Nobuaki”).

In the Amendment dated February 4, 2003, Applicants asserted that the prior art does not have first and second case units that are continuous as required by independent claims 1, 7, and 9. In addition, Applicants argued that Nobuaki does not disclose a case unit that is continuous along the sides. More particularly, Nobuaki does not disclose a case unit that is continuous along the flattened-oval sections of the stepping motor.

In the present Office Action, the Examiner asserted that while Nobuaki does not disclose a case unit that is continuous on its side, Hayashi does. (Hayashi, Figure 8).

Independent claims 1, 5, 7, and 9 require a fifth and sixth side walls that joins the third and fourth arcuate sections in a continuous flattened-oval shape. The claimed claw-pole permanent magnet stepping motor prevents external flux leakage and has a reduced size. (Specification, pg. 4, lines 7-18). In addition, the claimed continuous shape enables the claimed invention to be used in both magnetic and opto-magnetic devices. (Specification, pg. 13, lines 22-24).

Hayashi does not disclose a case unit with a flattened-oval shape. Because Hayashi does not disclose a case unit with a flattened-oval shape, Hayashi does not have a reduced size. Accordingly, Hayashi cannot be used in devices that impose restrictions of the outer diameter of case units. Because Hayashi does not disclose, teach, or suggest a case unit with a flattened-oval shape, Hayashi does not disclose, teach, or suggest each claim limitation. Therefore, Hayashi cannot anticipate the claimed invention.

Like Hayashi, Nobuaki also does not disclose, teach, or suggest each claim limitation. Nobuaki does not disclose a case unit with fifth and sixth side walls (12b). In fact, directly contrary to the claimed invention, Nobuaki discloses side openings. (Specification, pg. 10, lines 9-11). Because Nobuaki does not disclose fifth and sixth side walls, Nobuaki does not prevent external flux leakage. Accordingly, Nobuaki cannot be used in magnetic and opto-magnetic devices. (Specification, pg. 10, lines 7-9). In addition, Nobuaki is complex and costly to manufacture. (Specification, pg. 10, lines 11-12). Because Nobuaki does not disclose, teach, or suggest fifth and

sixth side walls in a continuous flattened-oval section, Nobuaki does not disclose, teach, or suggest each claim limitation. Therefore, Nobuaki cannot anticipate the claimed invention.

If Hayashi were modified with the teachings of Nobuaki, as suggested by the Examiner, the combination would still not teach or suggest each claim limitation. The claimed invention requires side walls. If Hayashi were modified with the teachings of Nobuaki, Hayashi would not have side walls, but instead side openings. Accordingly, were Hayashi modified with the teachings of Nobuaki, the combination would not teach or suggest each claim limitation. Accordingly, the combination of Hayashi and Nobuaki cannot render obvious the invention as defined by independent claims 1, 5, 7, and 9. Therefore, the claimed invention is patentable over the combination of Hayashi and Nobuaki.

Furthermore, if Hayashi were modified with the side openings of Nobuaki, the combination would not prevent external flux leakage. If Hayashi and Nobuaki were combined, the stepping motor would have side openings. Flux would leak through the side openings, thereby rendering the Hayashi/Nobuaki combination incompatible with magnetic and opto-magnetic devices. In addition, to manufacture the Hayashi/Nobuaki combination would be complex and costly because two pressing operations would be required. (Specification, pg. 10, lines 9-11). A first pressing operation would produce the outer shape of the Hayashi/Nobuaki combination, while a second pressing operation would produce the side openings of the Hayashi/Nobuaki combination. (Specification, pg. 10, lines 9-11). Accordingly, the combination of the applied references would not satisfy at least two intended purposes of the claimed invention, namely prevention of external flux leakage and simple production. (Specification, pg. 3, lines 7-11).

Independent claims 1, 7, and 9, as presently amended, require “at least one of said claw-poles facing the continuous flattened-oval section of the fifth and sixth side walls” or words to this effect. In addition to the above deficiencies in the cited prior art, neither Hayashi nor Nobuaki disclose at least one claw-pole facing the continuous flattened-oval section of the fifth and sixth side walls.

Hayashi does not disclose, teach, or suggest a flattened-oval section. Accordingly, Hayashi cannot have a claw-pole facing a flattened-oval section of the stepping motor as required by claims 1, 7, and 9 as presently amended. Because Hayashi does not disclose, teach, or suggest a case unit with a flattened-oval shape, Hayashi cannot have a claw-pole facing the continuous flattened-oval section, accordingly Hayashi does not disclose, teach, or suggest each claim limitation. Therefore, Hayashi cannot anticipate claims 1, 7, and 9 as presently amended.

Nobuaki does not disclose, teach or suggest a stepping motor with side walls. Accordingly, Nobuaki cannot have a claw-pole facing the fifth and sixth side walls as required by claims 1, 7, and 9 as presently amended. Because Nobuaki does not disclose, teach, or suggest a case unit with a claw-pole facing the fifth and sixth side walls, Nobuaki cannot have a claw-pole facing the fifth and sixth side walls, accordingly Nobuaki does not disclose, teach, or suggest each claim limitation. Therefore, Nobuaki cannot anticipate claims 1, 7, and 9 as presently amended.

Independent claim 5 requires “a first thin wall section on each fifth and sixth sections ... the first thin wall section having a third thickness...said third thickness being less than the second thickness [of the fifth and sixth side walls].” Figure 1(B) depicts the claimed third thickness (12c). Consequently, the claimed invention reduces the thickness of the flattened oval section of the claimed stepping motor in stages, thereby freeing the internal space within the stepping motor for additional copper windings, while maintaining the external size of the claw-pole permanent-magnet stepping motor. (Specification, pg. 5, lines 9-15). In addition, the claimed third thickness enables both an increase in torque or, in other words, power, while maintaining compatibility with devices that impose restrictions on the outer diameter of case units. (Specification, pg. 12, lines 5-7).

Hayashi does not disclose, teach, or suggest a flattened-oval section. Accordingly, Hayashi cannot have a thin wall section on the flattened-oval section as required by claim 5. Moreover, Hayashi cannot have a thin wall section on the flattened-oval section of the fifth and sixth side walls that is less than the second thickness of the fifth and sixth side walls. Because Hayashi does not disclose, teach, or suggest a case unit with a flattened-oval shape, Hayashi cannot have a thin wall section on the flattened-oval section of the fifth and sixth side walls that is less than

the second thickness of the fifth and sixth side walls. Accordingly, Hayashi does not disclose, teach, or suggest each claim limitation. Therefore, Hayashi cannot anticipate claim 5.

Nobuaki does not disclose, teach or suggest a stepping motor with side walls. Accordingly, Nobuaki cannot have a thin wall section on the fifth and sixth side walls as required by claim 5. Because Nobuaki does not disclose, teach, or suggest a thin wall section of the fifth and sixth side walls, Nobuaki cannot have a thin wall section on the fifth and sixth side walls that is less than the second thickness of the fifth and sixth side walls. Accordingly, Nobuaki does not disclose, teach, or suggest each claim limitation. Therefore, Nobuaki cannot anticipate claim 5 as presently amended.

Claim 2 depends from claim 1, claim 8 depends from claim 7, and claims 10-13 depend from claim 9. Accordingly, claims 2, 8, and 10-13 are patentable by virtue of their dependence on allowable base claims 1, 7 and 9, respectively.

In consideration of the above claim amendments and remarks, Applicants respectfully submits that the rejection pursuant to 35 U.S.C. §103 applied against claims 1-13 is moot. Therefore, Applicants respectfully request the withdrawal of the rejection pursuant to 35 U.S.C. §103.

III. Conclusion

In view of the above claim amendments and remarks, Applicants respectfully contend that independent claims 1, 5, 7, and 9 are allowable and that claims 2, 8, and 10-13 are likewise allowable by virtue of their dependence on an allowable base claim.

Applicants respectfully request that the rejections applied against the claims be withdrawn and that the case be swiftly passed to issuance.

Favorable action is earnestly solicited.



Application No.: 09/905,000

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Docket No.: 09613/000L088-US0

Dated: January 23, 2004

Respectfully submitted,

By Lisa J. Ulrich
Lisa J. Ulrich

Registration No.: 45,168
DARBY & DARBY P.C.
P.O. Box 5257
New York, New York 10150-5257
(212) 527-7700
(212) 753-6237 (Fax)
Attorneys/Agents For Applicant